<u>IN THE CLAIMS</u>

1. (Currently Amended) A method of generating a free-form surface model by a rounding operation, comprising:

applying <u>a</u> linear transformation <u>as said rounding operation</u> to a lattice polygon model to generate vertices of a free-form surface model corresponding to respective vertices of the lattice polygon model<u>, said linear transformation having an inverse transformation that serves as an inverse rounding operation to reconstruct the lattice polygon model from the free-form surface model</u>; and

generating control points of cubic Bezier curves that connect the vertices of the free-form surface model, and that correspond to respective edges of the lattice polygon model.

2. (Previously Presented) The method as claimed in claim 1, further comprising:

interpolating Gregory patches into a mesh comprised of the cubic Bezier curves.

3. (Currently Amended) ~~The method as claimed in claim 1, further comprising:~~

<u>A method of generating a free-form surface model by a rounding operation, comprising:</u>

<u>applying a linear transformation to a lattice polygon model to generate vertices of a free-form surface model corresponding to respective vertices of the lattice polygon model;</u>

<u>generating control points of cubic Bezier curves that connect the vertices of the free-form surface model, and that correspond to respective edges of the lattice polygon model;</u>

<u>and</u>

adding rounding information to the lattice polygon model, the rounding information controlling how round the free-form surface model is when the free-form surface model is generated from the lattice polygon model and the rounding information,

wherein said <u>step of</u> applying <u>the</u> linear transformation includes generating the

vertices of the free-form surface model by utilizing the rounding information.

4. (Original) The method as claimed in claim 3, wherein said rounding information

includes rounding information attached to the vertices and the edges of the lattice polygon

model.

5. (Currently Amended) ~~The method as claimed in claim 1, further comprising:~~

<u>A method of generating a free-form surface model by a rounding operation,</u>

<u>comprising:</u>

<u>applying a linear transformation to a lattice polygon model to generate vertices of a</u>

<u>free-form surface model corresponding to respective vertices of the lattice polygon model;</u>

<u>generating control points of cubic Bezier curves that connect the vertices of the free-</u>

<u>form surface model, and that correspond to respective edges of the lattice polygon model;</u>

<u>and</u>

reconstructing the lattice polygon model from the free-form surface model by

utilizing an inverse transformation of the linear transformation.

6. (Currently Amended) A computer-readable memory medium having a program

embodied therein for causing a computer to generate a free-form surface model by a rounding

operation, said program comprising program code units configured to perform:

applying <u>a</u> linear transformation <u>as said rounding operation</u> to a lattice polygon model

to generate vertices of a free-form surface model corresponding to respective vertices of the

lattice polygon model<u>, said linear transformation having an inverse transformation that serves</u>

as an inverse rounding operation to reconstruct the lattice polygon model from the free-form surface model; and

generating control points of cubic Bezier curves that connect the vertices of the free-form surface model, and that correspond to respective edges of the lattice polygon model.

7. (Previously Presented) The computer-readable memory medium as claimed in claim 6, further comprising:

interpolating Gregory patches into a mesh comprised of the cubic Bezier curves.

8. (Currently Amended) ~~The computer-readable memory medium as claimed in claim 6, further comprising:~~ A computer-readable memory medium having a program embodied therein for causing a computer to generate a free-form surface model by a rounding operation, said program comprising program code units configured to perform:

applying a linear transformation operation to a lattice polygon model to generate vertices of a free-form surface model corresponding to respective vertices of the lattice polygon model;

generating control points of cubic Bezier curves that connect the vertices of the free-form surface model, and that correspond to respective edges of the lattice polygon model; and

adding rounding information to the lattice polygon model, the rounding information controlling how round the free-form surface model is when the free-form surface model is generated from the lattice polygon model and the rounding information,

wherein said step of applying the linear transformation includes generating the vertices of the free-form surface model by utilizing the rounding information.

9. (Original) The computer-readable memory medium as claimed in claim 8, wherein said rounding information includes rounding information attached to the vertices and the edges of the lattice polygon model.

10. (Currently Amended) ~~The computer-readable memory medium as claimed in claim 6, further comprising:~~ A computer-readable memory medium having a program embodied therein for causing a computer to generate a free-form surface model by a rounding operation, said program comprising program code units configured to perform:

applying a linear transformation to a lattice polygon model to generate vertices of a free-form surface model corresponding to respective vertices of the lattice polygon model;

generating control points of cubic Bezier curves that connect the vertices of the free-form surface model, and that correspond to respective edges of the lattice polygon model; and

reconstructing the lattice polygon model from the free-form surface model by utilizing an inverse transformation of the linear transformation.

11. (Previously Presented) A method of transmitting 3D data via a network, comprising:

adding rounding information to a lattice polygon model, the rounding information controlling how round a free-form surface model is when the free-form surface model is generated from the lattice polygon model and the rounding information by applying linear transformation to the lattice polygon model to generate vertices of the free-form surface model corresponding to respective vertices of the lattice polygon model, and generating control points of cubic Bezier curves that connect the vertices of the free-form surface model, and that correspond to respective edges of the lattice polygon model; and

transmitting the lattice polygon model and the rounding information over the network.

12. (Previously Presented) A method of generating a free-form surface model, comprising:

receiving a lattice polygon model and rounding information via a network;

applying linear transformation to the lattice polygon model to generate vertices of a free-form surface model corresponding to respective vertices of the lattice polygon model; and

generating control points of cubic Bezier curves that serve as edges to connect the vertices of the free-form surface model, and that correspond to respective edges of the lattice polygon model, wherein the rounding information controls how close the vertices and edges of the free-form surface model are to the respective vertices and edges of the lattice polygon model.

13. (Original) A server device for transmitting 3D data via a network, configured

to add rounding information to a lattice polygon model, the rounding information controlling how round a free-form surface model is when the free-form surface model is generated from the lattice polygon model and the rounding information by applying linear transformation to the lattice polygon model to generate vertices of the free-form surface model corresponding to respective vertices of the lattice polygon model, and generating control points of cubic Bezier curves that connect the vertices of the free-form surface model, and that correspond to respective edges of the lattice polygon model; and

to transmit the lattice polygon model and the rounding information over the network.

14. (Original) A client device connected to a network, configured

to receive a lattice polygon model and rounding information via the network;

to apply linear transformation to the lattice polygon model to generate vertices of a

free-form surface model corresponding to respective vertices of the lattice polygon model;

and

to generate control points of cubic Bezier curves that serve as edges to connect the

vertices of the free-form surface model, and that correspond to respective edges of the

lattice polygon model,

wherein the rounding information controls how close the vertices and edges of the

free-form surface model are to the respective vertices and edges of the lattice polygon

model.

15. (Previously Presented) The method as claimed in claim 1, wherein said

rounding operation allows an inverse rounding operation to reconstruct the lattice polygon

model from the free-form surface model.

16. (Previously Presented) The method as claimed in claim 6, wherein said

rounding operation allows an inverse rounding operation to reconstruct the lattice polygon

model from the free form surface model.